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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application:	Jerry C. Nims et al.
Application No.:	10/652,025
Filed:	September 2, 2003
Art Unit:	2624
Confirmation No.:	1556
Examiner:	Stephen R. Koziol
For:	Multi-Dimensional Image System for Digital Image Input and Output

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pre Appeal Brief Request for Review

Dear Sir:

This Request is being filed in connection with a Notice of Appeal.

Status

Claims 1-5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Madden et al. (U.S. Pat. No. 6,249,285 B1) in view of Robinson (U.S. Pat. No. 6,438,260 B1).

I. Claims 1-5 are Not Unpatentable over Madden et al. in view of Robinson

Claims 1-5 remain pending. In the Office Action dated April 3, 2008, Claims 1-5 stand rejected under 35 U.S.C. 103(a), as being unpatentable over Madden, et al. (U.S. Patent No. 6,249,285) in view of Robinson (U.S. Patent No. 6,438,260), but these references neither form the basis of nor establish a *prima facie* case of obviousness. For a *prima facie* case of obviousness to be established, the following factual inquiries as enunciated in *Graham* must be determined: (A) determining the scope and contents of the prior art; (B) ascertaining the differences between the prior art and the claims at issue; (C) determining the level of skill in the pertinent art; and (D) evaluating any evidence of secondary considerations. Further, in *KSR*, a number of rationales for

supporting a conclusion of obviousness consistent with the "functional approach" in *Graham* were laid out. Additionally, it is key that the Examiner articulate their reason why the claimed invention would have been obvious. (MPEP 2143)

A. Independent Claims 1 and 5

Madden et al. in view of Robinson do not meet these criteria. Claim 1 is directed to a method for converting a two-dimensional image to a three-dimensional image for display through a micro optical medium. In converting the image, "a user entered depth command assigning a first depth value to a portion of said depth map corresponding to a first area" is entered and "a second depth value [is assigned] to a portion of said depth map not corresponding to said first area."

Madden et al., by contrast, describes "...a technique for displaying a visual representation of an estimated three-dimensional scene structure and the values of various parameters associated with the scene, together with a visual representation of at least one two-dimensional image used in the scene structure estimation algorithm." (*See* Abstract) Original two-dimensional images may be captured with a variety of optical recording devices, such as VCRs, DDRs, VTRS, etc., and displayed to a user. (col. 5, lns. 15-26; col. 7, lns. 28-31) Software employing "machine vision" and "image understanding" algorithms with optional captured parametric data 39A analyze the two-dimensional image to create and modify a modular scene model 40 that includes the original two-dimensional image and three-dimensional initial depth maps 55 and/or surface meshes 56. (col. 5, lns. 27-61; col. 7, lns. 33-40) The initial depth maps contain information, such as relative depths of pixels or pixel regions, derived from captured image sources and derived from camera data capture, manual data entry, and other secondary sensors. (col. 5, lines 48-56; col. 7, lns. 37-41).

The technique is used to then edit the two-dimensional image to integrate computer generated ("CG") images, such as dinosaur 70. (col. 7, lns. 1-15) This integration is facilitated by the depth maps 55 and/or surface meshes 56 that show the relative position of actual surfaces of objects, such as sport utility vehicle 72 and jungle 73, contained in the original two-dimensional image to enable a user to then integrate CG images with a desired orientation and location with respect to the existing original objects of the two-dimensional image. For example, the technique may determine the depth of the upper rack portion 84 to be grabbed by the integrated hand portion 71 of CG dinosaur 70 while not interacting with the back window 86 of vehicle 72. (col. 7, lns. 56-67) In refining the depth maps, the user provides inputs, where the user inputs include

"information to the system identifying elements or regions in the image as being *straight lines, planes, circles, and other geometric abstractions or pixel regions.*" (emphasis added) (col. 6, lines 1-3) For example, a user may "outline" the window portion 86 of the vehicle 72 and note it as being a plane to be shown in a particular view angle. (col. 9, lns. 45-63) The system may then force the mesh 82 to be flat in a later representation or display to redefine an estimate for local parameters, such as the depth of the rack 84. (col. 10, lns. 12-18) Finally, the user may drag indicated portions of the depth mesh 82 "around to provide a particular position that appears to be more aesthetically acceptable." (col. 10, lns. 53-57) Thus, the system taught by Madden et al. is not for producing a three-dimensional image, but for incorporating CG objects into existing two-dimensional images.

The user-entered information that identifies elements or regions as described above is not the same or analogous to a "user-entered depth command *assigning a first depth value* to a portion of said depth map corresponding to a first area." (emphasis added). In other words, defining types of image elements is not the same as a user-entered depth command that assigns a first depth value. Furthermore, although Madden et al. describes that the user provides input in the form of parametric adjustments, such as focal length, the physical distance between two points in the scene, camera position in time, camera shutter speed, and camera aperture settings (col. 6, lns. 23-40), these parametric adjustments are a second scenario (col. 6, ln. 23) and do not equate to "assigning a second depth value to a portion of said depth map not corresponding to said first area," as recited in Applicant's claimed invention.

In addition to Madden et al. not teaching or suggesting the "receiving" and "assigning" elements of claim 1 as described above, Applicant respectfully rejects that information derived from the "automated scene process" of Madden et al. is the same or equivalent to "a user-entered depth command assigning a first depth value." Madden et al.'s depth values are not derived in the same or similar manner as claimed by Applicant.

Turning to Robinson, it describes a method for creating a 2½D solid model picture from a 3D image in which a stereoscopic image is identified as a series of depth slices and the resulting slice data is built up to a 2½D model. The process described in Robinson is opposite that of Applicant's claimed invention, which generates a 3D image from a 2D image. More particularly, Robinson teaches "[a]n advantage of the invention is that despite *starting with a stereoscopic image* rather than a multiple slice image, a reconstruction can still be made automatically in software to provide a 2½D

display with all its current features. (emphasis added) The net result will be both a full binocular stereoscopic image (3D) and also a 2½D solid model reconstruction derived from it [(i.e., the 3D image)]." (col. 4, lns. 7-12) In other words, Robinson teaches generating a 2½D image from a 3D image, which is opposite to what Applicant's claimed invention does.

As cited in the Office Action, Robinson briefly describes using the stereoscopic viewing method known as the anaglyph technique using colors and associated filters to identify particular depth plane information of superimposed images. Robinson apparently uses this brief introduction of the anaglyph technique to disclose that such images may contain original left image and right image data of a stereoscopic image to enable software to reconstruct a 2½D display. Robinson describes this technique as using progressive lateral shifting to achieve their invention. This lateral shifting; however, appears to be used for generating a 2½D image. Applicant respectfully submits that the invention, as claimed, uses the user-entered first depth value and the second depth value in performing the shifting to generate a parallax image for creating a 3D image. Additionally, as claimed in the present application, the displayed anaglyph image is based on the two-dimensional image and the parallax image, not a superimposed image that has already been created. The parallax image claimed in claim 1 of the present application is generated from the two-dimensional image shifted on the first depth value and the second depth value.

As previously described, Madden et al. does not teach or suggest a user-entered first depth value and second depth value as claimed. Because Madden et al. does not teach or suggest two of Applicant's claim elements and Robinson teaches away from Applicant's claimed invention, the combination of Madden et al. and Robinson at a minimum cannot teach or suggest Applicant's claimed invention and, more likely, teaches away from Applicant's claimed invention.

Further, the Examiner cites Official Notice regarding the "generating," "receiving," and "printing" elements; respectfully, the Applicant rejects this assertion. The Examiner has not adequately demonstrated that the unsupported documentary evidence of these elements is well-known or to be common knowledge in the art capable of instant and unquestionable demonstration as being well-known. (MPEP §2144.03) Moreover, these elements further include many limitations, such as generated parallax images based on the first depth value and the second depth value; generated rasterized, interlaced image file; alternating strips of the two-dimensional image and parallax image; micro optical media, etc., which the Examiner also includes in the Official Notice

assertion. Accordingly, the Examiner is respectfully requested to provide prior art references to support the Official Notice for those rejected elements and limitations based on the Official Notice.

Finally, the Examiner has applied impermissible hindsight in gathering these disparate references in combination with improper Official Notice in order to reconstruct the invention of claim 1 from prior art with the present invention before the Examiner. Madden et al. and Robinson teach completely different systems that solve different problems. Further, as discussed above, the Official Notice is not supported and improperly covers a large number of elements and related limitations.

Therefore, Applicant respectfully requests that the rejection of claim 1 under 35 U.S.C. 103(a) be withdrawn. Independent claim 5 includes analogous claim elements as claim 1 and, thus, should be allowable over Madden et al. and Robinson for at least the same reasons as described above with respect to claim 1.

B. Dependent Claims 2-4

As stated above, Applicants believe that independent claim 1 is allowable over the cited art. Claims 2-4 each depend from this independent claim and add further limitations. Accordingly, Applicants believe claims 2-4 should also be allowed.

Conclusion

In view of the forgoing, the Panel is respectfully requested to allow claims 1-5. This Brief is being filed in conjunction with a Petition for a One-Month Extension of Time. The Extension fee of $60.00 and the Notice of Appeal fee of $255.00 also accompany this filing. Applicant believes no additional fees are due for this filing. If any additional fees are due or any overpayments have been made; however, please charge or credit Deposit Account No. 50-0709 of Patton Boggs LLP.

Respectfully submitted:

By: _____

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